AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): An indium phosphide substrate containing iron or tin as a dopant, comprising:

an average dislocation density value of a wafer being less than 5000 cm^{-2};

a ratio of the difference between a maximum value and a minimum value with respect to an average value of dopant concentration in said wafer being 30% or less;

a substantially uniform distribution of said dopant concentration in the depth direction of said wafer.

Claim 2 (currently amended): An indium phosphide substrate containing iron or tin as a dopant, comprising:

an average dislocation density value of a wafer being less than 2000 cm^{-2};

a ratio of the difference between a maximum value and a minimum value with respect to an average value of dopant concentration in said wafer being 30% or less;

a substantially uniform distribution of dopant concentration in the depth direction of said wafer.

Claim 3 (previously presented): An indium phosphide substrate according to Claim 1, wherein:

diameter of said substrate is 75 mm or greater.

Claim 4 (previously presented): An indium phosphide substrate according to Claim 1, wherein:

diameter of said substrate is 100 mm or greater.

Claim 5 (currently amended): An indium phosphide substrate ~~according to Claim 1, wherein:~~

~~said dopant is Fe (iron)~~ containing sulfur or zinc as a dopant and having a diameter greater than or equal to 100 mm, comprising:

an average dislocation density value of a wafer being less than 5000 cm^{-2};

a ratio of the difference between a maximum value and a minimum value with respect to an average value of dopant concentration in said wafer being 30% or less;

a substantially uniform distribution of said dopant concentration in the depth direction of said wafer.

Claim 6 (currently amended): An indium phosphide substrate ~~according to Claim 1, wherein:~~

~~said dopant is S (sulfur)~~ containing sulfur or zinc as a dopant and having a diameter greater than or equal to 100 mm, comprising:

an average dislocation density value of a wafer being less than 2000 cm^{-2};

a ratio of the difference between a maximum value and a minimum value with respect to an average value of dopant concentration in said wafer being 30% or less;

a substantially uniform distribution of said dopant concentration in the depth direction of said wafer.

Claims 7, 8 (canceled).

Claim 9 (currently amended): An indium phosphide crystal containing iron or tin as a dopant, wherein [[comprising]]:

a direction of growth has a [[being]] <100> orientation; and

an average dislocation density value on a (100) plane, which is perpendicular to said growth direction, is [[being]] less than 5000 cm^{-2}.

Claim 10 (currently amended): An indium phosphide crystal containing iron or tin as a dopant, wherein [[comprising]]:

a direction of growth has a [[being]] <100> orientation; and

an average dislocation density value on a (100) plane, which is perpendicular to said growth direction, is [[being]] less than 2000 cm^{-2}.

Claim 11 (currently amended): An indium phosphide crystal according to Claim 9 , wherein:

a diameter of said crystal is 75 mm or greater.

Claim 12 (currently amended): An indium phosphide crystal according to Claim 9, wherein:

a diameter of said crystal is 100 mm or greater.

Claim 13 (currently amended): An indium phosphide crystal ~~according to Claim 9,~~ containing

sulfur or zinc as a dopant and having a diameter of 100 mm or more, wherein:

~~said dopant is Fe (iron)~~ a direction of growth has a <100> orientation;

an average dislocation density value on a (100) plane, which is perpendicular to said growth direction, is less than 5000 cm^{-2}.

Claim 14 (currently amended): An indium phosphide crystal ~~according to Claim 9,~~ containing sulfur or zinc as a dopant and having a diameter of 100 mm or more, wherein:

~~said dopant is S (sulfur)~~ a direction of growth has a <100> orientation; and

an average dislocation density value on a (100) plane, which is perpendicular to said growth direction, is less than 2000 cm^{-2}.

Claims 15, 16 (canceled).

Claim 17 (currently amended): A method for manufacturing an indium phosphide monocrystal containing a dopant, comprising:

placing a seed crystal, which has a cross-sectional area of 15% to 98% ~~or greater~~ of a cross-sectional area of a crystal body, has an average dislocation density of less than 5000 cm^{-2} and has a substantially constant cross-sectional area along a length direction, at a lower end of a growth container so that direction of growth of said crystal is <100> oriented, said growth container including a seed crystal housing region having a substantially constant cross-sectional area, a crystal body housing region having a cross-sectional area larger than that of the seed crystal housing

region, and a tapering region between the seed crystal housing region and the crystal body housing region;

placing said growth container containing said seed crystal, indium phosphide raw material, dopant, and boron oxide in a crystal growth chamber, and raising the temperature to at or above the melting point of indium phosphide;

after heating and melting boron oxide, indium phosphide raw material, dopant, and a portion of said seed crystal, lowering the temperature of said growth container in order to grow a monocrystal with a <100> orientation in a longitudinal direction of said growth container.

Claims 18, 19 (canceled).

Claim 20 (currently amended): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

in a longitudinal cross-section which includes a crystal central axis, an angle of said [[a]] tapering region from said seed crystal to said crystal body with respect to said crystal central axis is 40 degrees or less.

Claim 21 (currently amended): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

in a longitudinal cross-section which includes a crystal central axis, an angle of <u>said</u> [[a]] tapering region from said seed crystal to said crystal body with respect to said crystal central axis is 20 degrees or less.

Claim 22 (canceled).

Claim 23 (previously presented): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

said seed crystal has an average dislocation density of less than 2000 cm^{-2}.

Claim 24 (previously presented): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

said seed crystal has an average dislocation density that is lower than a target average dislocation density of said crystal which is to be grown.

Claim 25 (previously presented): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

after maintaining said indium phosphide raw material, dopant, and a portion of said seed crystal in a heated melted state for a fixed period of time, the temperature of said growth container is lowered in order to grow a monocrystal with a <100> orientation in a longitudinal direction of said growth container.

Claim 26 (original): A method for manufacturing an indium phosphide monocrystal according to Claim 25, wherein:

after maintaining said indium phosphide raw material, dopant, and a portion of said seed crystal in a heated melted state for 1 hour or more, the temperature of said growth container is lowered in order to grow a monocrystal with a <100> orientation in a longitudinal direction of said growth container.

Claim 27 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

growth rate when growing said crystal from said seed crystal is 10 mm/hour or less.

Claim 28 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

growth rate when growing said crystal from said seed crystal is 5 mm/hour or less.

Claim 29 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

growth rate when growing said crystal from said seed crystal is 2.5 mm/hour or greater.

Claim 30 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

said growth container is a pBN (pyrolytic boron nitride) container.

Claim 31 (currently amended): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

prior to housing said seed crystal, indium phosphide raw material, dopant, and boron oxide in said growth container, an inner surface of said growth container, at least a part which will come into contact with a melt produced by the melting step, is coated with a boron oxide film.

Claim 32 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

said crystal body has a diameter of 75 mm or greater.

Claim 33 (previously presented): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

said crystal body has a diameter of 100 mm or greater.

Claim 34 (previously presented): A method for manufacturing an indium phosphide monocrystal according to Claim 17, wherein:

said dopant is Fe (iron).

Claim 35 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claim 17, wherein:

said dopant is S (sulfur).

Claim 36 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claims 17, wherein:

said dopant is Sn (tin).

Claim 37 (previously presented): A method for manufacturing an indium phosphide monocrystal containing a dopant according to Claims 17, wherein:

said dopant is Zn (zinc).